THE WHITE-MARKED TUSSOCK-MOTH (ORGYIA LEUCOSTIGMA SMITH AND ABBOTT) IN CHICAGO.

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Throughout the months of June and July 1893, there were myriads of caterpillars of the White-Marked Tussock-Moth (*Orgyia leucostigma*) crawling on the sidewalks, in the grass and in the streets in the section south of the river in Chicago. These caterpillars could be seen constantly changing their positions, drifting from place to place. One need not have searched far to determine the cause of these shifting movements—for the White Elm trees (*Ulmus americanus*) which are set out in some of the resident portions, on the sides of the streets, at that time were almost completely defoliated; showing that they were infested by this insect. As soon as one tree became despoiled of its leaves the caterpillars centered their attacks upon other trees adjacent to them. The beautiful hairy larva of Orgyia marked with yellow, black, and two little bright vermillion red spots on the ninth and tenth joints is a conspicuous object. It seems to have few natural enemies and parasites that are menacing its welfare here.

Notwithstanding the possible existence of a few deadly foes, it enjoys immunity from these to a larger extent than many other insects, as shown from the fact of the growing preponderance of individuals in the last three years. The Wheel-bug sometimes attack the caterpillars, but the former does not occur in the city, whereas bats, cuckoos and robins are in insufficient numbers to make any appreciable impression on them. In the middle or latter part of August, the male moths are most abundant, flying about at night. Attracted by artificial lights, they frequently are seen on the glass of the shop windows along the streets. One appeared on the inside wall of a house (August 28, 1893) and was caught by the writer. The position of the hairy forelegs placed in front of the body,

with other characteristics which it possesses, are attractive to the entomologist. Natural selection has favored the structure of the legs, the feathery antennæ, the subdued ashy-gray color, all to one purpose; to lend in blending its form with the natural environment on the bark of trees. In fact we find

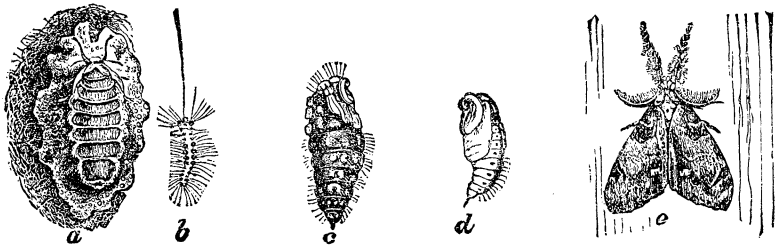

Fig. 1. White-marked Tussock-moth: *a*, female moth on cocoon; *b*, young larva hanging by thread; *c*, female pupa; *d*, male pupa; *e*, male moth. [After Riley].

the caterpillar favored by its very conspicuousness, while nature is effecting good to the same species on a diametrically different line by so modifying the form of the male moth as to deceive its enemies from seeing it. Parasitism may be looked upon as a recent enemy—for nature is strangely unable to cope against their invasion. The female pupa within a frail cocoon may be pierced with ease by the ovipositor of a Hymenopterous parasite and is obliged to give up her life's juices in hopeless submissson to the offspring of the parasite hatching within her body. Along these lines we are to look forward for a means of extermination. On September 30, 1893, the tree trunks along the streets in the locality above named, were examined with a view of learning some further facts about Orgyia. A number of cocoons were found as the result of the search, all being near the ground. These were taken home to my study, where on opening them, they proved to be quite old, of a dirty color, and many were deserted. On two of the cocoons there were plastered masses of small white eggs made adherent by some glistening tenacious frothy substance which had become hardened on drying. Inside of others were empty pupas and cast off skins. Some Hymenopterous parasites had hatched and lived in the old pupa husks, which later had made their exit through an irregular hole cut

out at the forward end. In another cocoon there still lay in store another suprise, for on tearing apart the hairy fibers, out rolled a small undetermined gray spider which was snugly secreted and warmly covered for the winter. The spider was tumbled into a bottle of preserving fluid and now bears testimony to the unprofitable experience of tenanting a ramshackle old dwelling of Orgyia.